

### Claims

What is claimed is:

1. A brain stimulation system, comprising:  
a stimulator operative to electrically stimulate a white matter brain structure associated with a non-white matter brain structure, whereby stimulation of the white matter brain structure can overdrive at least some electrical activity of the non-white matter brain structure.
2. The system of claim 1, the non-white matter brain structure further comprising a predetermined epileptogenic zone fibrously connected with the white matter brain structure.
3. The system of claim 1, the predetermined epileptogenic zone comprising at least one of hippocampus, cortical structure and temporal lobe.
4. The system of claim 3, the white matter brain structure comprising at least one of fornix, corpus callosum and temporal stem white matter, according to the predetermined epileptogenic zone.
5. The system of claim 1, further comprising a signal generator operative to cause the stimulator to provide an electrical signal having an electrical characteristic for stimulating the white matter brain structure.
6. The system of claim 5, the electrical characteristic further comprising a frequency that is less than about 10 Hz.
7. The system of claim 6, the frequency being less than about 3 Hz.

8. The system of claim 1, the stimulator comprising a generally cylindrical body portion having at least one electrode located at an interior portion of the body portion for electrically stimulating the white matter brain structure based on a signal from an associated control system.
9. The system of claim 8, the generally cylindrical body portion having an annular or generally C-shaped cross section, an inner sidewall portion of which is dimensioned and configured for attachment to the fornix.
10. A method of brain stimulation, comprising:
  - placing at least one electrode at a location for electrically stimulating a white matter brain structure; and
  - using the at least one electrode to electrically stimulate the white matter brain structure to overdrive at least some electrical activity of a non-white matter brain structure associated with the white matter brain structure.
11. The method of claim 10, further comprising determining a location of the non-white matter brain structure.
12. The method of claim 11, the non-white matter brain structure further comprising an epileptogenic zone.
13. The method of claim 12, the epileptogenic zone comprising at least one of a hippocampus, cortical structure and temporal lobe.
14. The method of claim 12, further comprising implanting the electrode for electrically stimulating at least one of the fornix, corpus callosum and temporal stem based on the determined epileptogenic zone.
15. The method of claim 10, the white matter brain structure further comprising at least one of the fornix, corpus callosum and temporal stem white matter.

16. The method of claim 1, further comprising causing the electrode to electrically stimulate the white matter brain structure with an electrical signal having an electrical characteristic.

17. The method of claim 16, the electrical characteristic further comprising a frequency that is less than about 10 Hz.

18. The method of claim 17, the frequency being less than or equal to about 3 Hz.

19. The method of claim 10, the placement of the at least one electrode further comprising substantially securing the at least one electrode in electrical contact with the white matter brain structure to facilitate electrical stimulation thereof.

20. The method of claim 10, the placement of the at least one electrode further comprising endoscopy to facilitate placing the at least one electrode in electrical contact with the white matter brain structure.